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EXAMINER	
HSU, ALPUS	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/872,146	CHEN ET AL.	
	Examiner	Art Unit	
	Alpus H. Hsu	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,8-11,13-33 and 35-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-6, 8-11, 13-33, 35-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-5, 11, 13-20, 23, and 35-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Surprenant et al. in U.S. Patent No. 6,266,341 (of record) in view of Castellano in U.S. Patent No. 6,674,750 (of record).

Referring to claim 1, Surprenant et al. disclose a network switch (office communications system) comprising a backplane (TDM Bus) to carry data traffic of multiple types using a single, internal cell format (see column 8, lines 35-44), a plurality of interface cards coupled to the backplane via an interface (see Fig. 3), the interface cards coupled to receive multiple channels of network traffic from external sources (such as POTS, T-1/PRI, ATM, etc., see Fig. 3), the plurality of interface cards to receive one or more channels of data according to a TDM protocol (POTS or T-1/PRI) or one or more channels of data according to a second protocol (ATM), the interface cards to convert data received according to the TDM protocol and the data received according to the second protocol to the internal cell format and to route the channels of data for synchronous or asynchronous transmission over the backplane using the single internal cell format (see column 7, lines 52-59, column 8, lines 35-44) to one or more predetermined interface cards (such as ATM card #82 to ATM controller card #79B in Fig. 3) coupled to the backplane within the network switch (see Figure 3).

Surprenant et al. differ from claim 1 in that they fail to disclose the use of a single internal cell format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead. However, the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead is well known in the art.

Castellano, for example, teaches the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead (see column 9, lines 6-15, column 11, lines 31-40, column 13, lines 3-12), which has the advantage of maximizing bandwidth efficiency. One skilled in the art would have recognized the advantage of using a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead as taught by Castellano. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead as taught by Castellano into the communications system of Surprenant et al. to achieve the advantage of maximizing the bandwidth efficiency.

Referring to claim 3, Surprenant et al. disclose that the second protocol is a network traffic protocol. Specifically, they disclose that it is ATM, which is a network traffic protocol (see Fig. 3 and see column 8, lines 59-67 and column 9, lines 1-3).

Referring to claim 4, Surprenant et al. disclose that the second protocol is ATM (see Fig. 3 and see column 8, lines 59-67 and column 9, lines 1-3).

Referring to claim 5, Surprenant et al. fail to expressly disclose that the second protocol comprises Internet Protocol (IP). However, Surprenant et al. do disclose the use of "other WAN-type network services as determined by the particular office work environment" (see column 9, lines 1-3). IP is an extremely common WAN-type network service in many office work environments. A person with skill in the art would have recognized this. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of IP as a network traffic protocol in the office communications system of Surprenant et al. to achieve the advantage of making it compatible with a greater number of office work environments.

Referring to claim 11, Surprenant et al. disclose a method comprising receiving multiple channels of network traffic from external sources via a network interface (see Fig. 3, network interface not numbered) of an interface card (see Fig. 3, #82), wherein the multiple channels of network traffic to include one or more channels of data according to a time division multiplexed (TDM) protocol (such as POTS or T-1/PRI, see Fig. 3) or one or more channels of data according to a second protocol (such as ATM, see Fig. 3); converting the TDM data and the second protocol data to a an internal cell format (see column 8, lines 32-58, which discloses that the Switch/MUX card requires multiplexing circuitry to access the bus by putting the data into TDM frames; and routing the channels of data in the predetermined format (see column 7, lines 52-59, column 8, lines 32-44) for synchronous or asynchronous transmission via a backplane (TDM Bus, see Fig. 3) connection (see Fig. 3, backplane connection not numbered) to one or more predetermined destinations (see column 8, lines 59-67 and column 9, lines 1-3).

Surprenant et al. differ from claim 11 in that they fail to disclose the use of a single internal cell format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead. However, the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead is well known in the art.

Castellano, for example, teaches the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead (see column 9, lines 6-15, column 11, lines 31-40, column 13, lines 3-12), which has the advantage of maximizing bandwidth efficiency. One skilled in the art would have recognized the advantage of using a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead as taught by Castellano. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead as taught by Castellano into the communications system of Surprenant et al. to achieve the advantage of maximizing the bandwidth efficiency.

Referring to claim 13, Surprenant et al. disclose that the second protocol is a network traffic protocol. Specifically, they disclose that it is ATM, which is a network traffic protocol (see Fig. 3 and see column 8, lines 59-67 and column 9, lines 1-3).

Referring to claim 14, Surprenant et al. disclose that the second protocol is ATM (see Fig. 3 and see column 8, lines 59-67 and column 9, lines 1-3).

Referring to claim 15, Surprenant et al. fail to expressly disclose that the second protocol comprises Internet Protocol (IP). However, Surprenant et al. do disclose the use of "other WAN-type network services as determined by the particular office work environment" (see column 9, lines 1-3). IP is an extremely common WAN-type network service in many office work environments. A person with skill in the art would have recognized this. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of IP as a network traffic protocol in the office communications system of Surprenant et al. to achieve the advantage of making it compatible with a greater number of office work environments.

Referring to claim 16, Surprenant et al. disclose an apparatus (office communications system) comprising means for receiving multiple channels of network traffic from external sources via a network interface (see Fig. 3, network interface not numbered) of an interface card (see Fig. 3, #82), wherein the multiple channels of network traffic to include one or more channels of data according to a time division multiplexed (TDM) protocol (such as POTS or T-1/PRI, see Fig. 3) or one or more channels of data according to a second protocol (such as ATM, see Fig. 3); means for converting the TDM data and the second protocol data to an internal cell format (see column 8, lines 32-58, which discloses that the Switch/MUX card requires multiplexing circuitry to access the bus by putting the data into TDM frames); and means for routing the channels of data in the internal cell format (see column 7, lines 52-59, column 8, lines 32-44) for synchronous or asynchronous transmission via a backplane (TDM Bus) connection (see Fig. 3, backplane connection not numbered) to one or more predetermined destinations (see column 8, lines 59-67 and column 9, lines 1-3).

Surprenant et al. differ from claim 16 in that they fail to disclose the use of a single internal cell format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead. However, the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead is well known in the art.

Castellano, for example, teaches the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead (see column 9, lines 6-15, column 11, lines 31-40, column 13, lines 3-12), which has the advantage of maximizing bandwidth efficiency. One skilled in the art would have recognized the advantage of using a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead as taught by Castellano. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead as taught by Castellano into the communications system of Surprenant et al. to achieve the advantage of maximizing the bandwidth efficiency.

Referring to claim 17, Surprenant et al. disclose that the second protocol is a network traffic protocol. Specifically, they disclose that it is ATM, which is a network traffic protocol (see Fig. 3 and see column 8, lines 59-67 and column 9, lines 1-3).

Referring to claim 18, Surprenant et al. disclose that the second protocol is ATM (see Fig. 3 and see column 8, lines 59-67 and column 9, lines 1-3).

Referring to claim 19, Surprenant et al. fail to expressly disclose that the second protocol comprises Internet Protocol (IP). However, Surprenant et al. do disclose the use of "other WAN-type network services as determined by the particular office work environment" (see column 9, lines 1-3). IP is an extremely common WAN-type network service in many office work environments. A person with skill in the art would have recognized this. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of IP as a network traffic protocol in the office communications system of Surprenant et al. to achieve the advantage of making it compatible with a greater number of office work environments.

Referring to claim 20, Surprenant et al. disclose that one or more of the interface cards receive electrical signals to communicate the network traffic (see column 5, line 64, and note that Ethernet ports receive electrical signals to communicate network traffic).

Referring to claim 23, Surprenant et al. disclose that one or more of the interface cards receive electrical signals to communicate the network traffic (see column 5, line 64, and note that Ethernet ports receive electrical signals to communicate network traffic).

Referring to claim 35, Surprenant et al. disclose a network switch comprising: a backplane (TDM Bus, see Figure 3, #78); and a plurality of ingress interface cards (see Figure 3, #82) coupled to the backplane to receive multiple channels of network traffic from external sources (see Figure 3, #23, #44, #58), to receive one or more channels of data according to a time division multiplexed (TDM) protocol (T-1, POT) and one or more channels of data according to a second protocol (Wireless, ATM) to convert the TDM data and the data according to the second protocol to an internal cell format (see column 8, lines 35-44), and to route the channels

of data for synchronous or asynchronous transmission over the backplane using the internal cell format (see column 7, lines 52-59, column 8, lines 35-44) to one or more egress interface cards coupled to the backplane (see Figure 3, #82, #79).

Surprenant et al. differ from claim 35 in that they fail to disclose the use of a single internal cell format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead. However, the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead is well known in the art.

Castellano, for example, teaches the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead (see column 9, lines 6-15, column 11, lines 31-40, column 13, lines 3-12), which has the advantage of maximizing bandwidth efficiency. One skilled in the art would have recognized the advantage of using a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead as taught by Castellano. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead as taught by Castellano into the communications system of Surprenant et al. to achieve the advantage of maximizing the bandwidth efficiency.

Referring to claim 36, Surprenant et al. disclose that the second protocol comprises a network traffic protocol (ATM is a network protocol).

Referring to claim 37, Surprenant et al. disclose that the second protocol comprises an asynchronous transfer mode (ATM) protocol (see Figure 3, #82 and #79B).

Referring to claim 38, Surprenant et al. in view of Castellano fail to expressly disclose that the second protocol comprises Internet Protocol (IP). However, Surprenant et al. do disclose the use of "other WAN-type network services as determined by the particular office work environment" (see column 9, lines 1-3). IP is an extremely common WAN-type network service in many office work environments. A person with skill in the art would have recognized this. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of IP as a network traffic protocol in the office communications system of Surprenant et al. to achieve the advantage of making it compatible with a greater number of office work environments.

Referring to claim 39, Surprenant et al. disclose that the ingress interface cards comprise conversion circuitry to convert the one or more channels of data according to a time division multiplexed (TDM) protocol and one or more channels of data according to a second protocol to the single format (see column 8, lines 32-58, which discloses that the Switch/MUX card requires multiplexing circuitry to access the bus. Although Surprenant et al. do not explicitly disclose it, one skilled in the art would have recognized that it would have been obvious to provide all the cards connected to the TDM bus with such circuitry to enable each of them to communicate over the TDM bus).

Referring to claim 40, Surprenant et al. disclose that the egress interface cards comprise conversion circuitry to convert the one or more channels of data according to the single format to the time division multiplexed (TDM) protocol and/or the second protocol (see column 8, lines

32-58, which discloses that the Switch/MUX card requires multiplexing circuitry to access the bus. Although Surprenant et al. do not explicitly disclose it, one skilled in the art would have recognized that it would have been obvious to provide all the cards connected to the TDM bus with such circuitry to enable each of them to communicate over the TDM bus).

3. Claims 6, 8-10, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Surprenant et al. in U.S. Patent No. 6,266,341 (of record) in view of Castellano in U.S. Patent No. 6,674,750 (of record), further in view of Degges et al. in U.S. Patent No. 5,953,329 (of record).

Referring to claim 6, Surprenant et al. disclose an interface card (see Fig. 3, #82) comprising a backplane interface (see Fig. 3, backplane interface is not numbered) to transmit and receive data synchronously or asynchronously over a backplane (TDM Bus, see Fig. 3) using a single, internal cell format (see column 7, lines 52-59, column 8, lines 35-44); a network interface (see Fig. 3, network interface is not numbered) to transmit and receive multiple channels of network traffic from external sources, the multiple channels of network traffic to include one or more channels of data according to a time division multiplexed (TDM) protocol or one or more channels of data according to a second protocol; and conversion circuitry to convert the TDM data and the second protocol data to the internal cell format (see column 8, lines 32-58, which discloses that the Switch/MUX card requires multiplexing circuitry to access the bus. Although Surprenant et al. do not explicitly disclose it, one skilled in the art would have recognized that it would have been obvious to provide all the cards connected to the TDM bus with such circuitry to enable each of them to communicate over the TDM bus).

Surprenant et al. differ from claim 6 in that they fail to disclose the use of a single internal cell format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead. However, the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead is well known in the art.

Castellano, for example, teaches the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead (see column 9, lines 6-15, column 11, lines 31-40, column 13, lines 3-12), which has the advantage of maximizing bandwidth efficiency. One skilled in the art would have recognized the advantage of using a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead as taught by Castellano. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of a frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead as taught by Castellano into the communications system of Surprenant et al. to achieve the advantage of maximizing the bandwidth efficiency.

Furthermore, Surprenant et al. in view of Castellano do not disclose the use of a time slot management circuit coupled between the backplane interface and the network interface, the time slot management circuit to route the channels of data over the backplane to one or more predetermined destinations. However, the use of time slot managers in TDM cards is well known in the art.

For example, Degges et al. teach the use of a time slot manager on a T-1 card (see column 10, lines 20-30), which has the advantage of enabling the card to handle TDM traffic. One skilled in the art would have recognized the advantage of using a time slot manager in a TDM card as taught by Degges et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of a time slot manager as taught by Degges et al. into the invention of Surprenant et al. in view of Castellano to achieve the advantage of enabling the card to handle TDM traffic.

Referring to claim 8, Surprenant et al. disclose that the second protocol is a network traffic protocol. Specifically, they disclose that it is ATM, which is a network traffic protocol (see Fig. 3 and see column 8, lines 59-67 and column 9, lines 1-3).

Referring to claim 9, Surprenant et al. disclose that the second protocol is ATM (see Fig. 3 and see column 8, lines 59-67 and column 9, lines 1-3).

Referring to claim 10, Surprenant et al. fail to expressly disclose that the second protocol comprises Internet Protocol (IP). However, Surprenant et al. do disclose the use of "other WAN-type network services as determined by the particular office work environment" (see column 9, lines 1-3). IP is an extremely common WAN-type network service in many office work environments. A person with skill in the art would have recognized this. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of IP as a network traffic protocol in the office communications system of Surprenant et al. to achieve the advantage of making it compatible with a greater number of office work environments.

Referring to claim 26, Surprenant et al. disclose that the network interface (port) receives one or more channels of network traffic as electrical signals (see column 5, line 64, and note that Ethernet ports receive electrical signals to communicate network traffic).

4. Claims 21-22, 24-25, 29, and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Surprenant et al. in U.S. Patent No. 6,266,341 (of record) in view of Castellano in U.S. Patent No. 6,674750 (of record), further in view of DeNap et al. in U.S. Patent No. 6,407,997 (of record).

Referring to claim 21, Surprenant et al. in view of Castellano fail to disclose that one or more of the interface cards receive optical signals to communicate the network traffic. However, the use of optical signals to communicate network traffic is well known in the art. For example, DeNap et al. teach the use of ATM/SONET with OC-3 (optical) interfaces, which has the advantage of providing high-speed ATM interfaces. One skilled in the art would have recognized the advantage of using ATM/SONET with OC-3 interfaces as taught by DeNap et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of ATM/SONET with OC-3 interfaces as taught by DeNap et al. into the office communications system of Surprenant et al. in view of Castellano to achieve the advantage of providing high-speed ATM interfaces.

Referring to claim 22, Surprenant et al. in view of Castellano fail to disclose that the optical signals comprise SONET-framed data. However, the use of optical signals comprising SONET-framed data to communicate network traffic is well known in the art. For example, DeNap et al. teach the use of ATM/SONET with OC-3 (optical) interfaces, which has the advantage of providing high-speed ATM interfaces. One skilled in the art would have

recognized the advantage of using ATM/SONET with OC-3 interfaces as taught by DeNap et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of ATM/SONET with OC-3 interfaces as taught by DeNap et al. into the office communications system of Surprenant et al. in view of Castellano to achieve the advantage of providing high-speed ATM interfaces.

Referring to claim 24, Surprenant et al. in view of Castellano fail to disclose that one or more of the predetermined interface cards transmit optical signals. However, the use of optical signals to communicate network traffic is well known in the art. For example, DeNap et al. teach the use of ATM/SONET with OC-3 (optical) interfaces, which has the advantage of providing high-speed ATM interfaces. One skilled in the art would have recognized the advantage of using ATM/SONET with OC-3 interfaces as taught by DeNap et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of ATM/SONET with OC-3 interfaces as taught by DeNap et al. into the office communications system of Surprenant et al. in view of Castellano to achieve the advantage of providing high-speed ATM interfaces.

Referring to claim 25, Surprenant et al. in view of Castellano fail to disclose that the optical signals comprise SONET-framed data. However, the use of optical signals comprising SONET-framed data to communicate network traffic is well known in the art. For example, DeNap et al. teach the use of ATM/SONET with OC-3 (optical) interfaces, which has the advantage of providing high-speed ATM interfaces. One skilled in the art would have recognized the advantage of using ATM/SONET with OC-3 interfaces as taught by DeNap et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the

invention to incorporate the use of ATM/SONET with OC-3 interfaces as taught by DeNap et al. into the office communications system of Surprenant et al. in view of Castellano to achieve the advantage of providing high-speed ATM interfaces.

Referring to claim 29, Surprenant et al. in view of Castellano teach the conversion of the received data to a TDM format for transmission over the backplane but fail to teach the conversion of the received data to an internal cell format for transmission over the backplane. However, conversion to an internal cell format for transmission over the backplane is well known in the art. For example, DeNap et al. teach conversion of received data to an internal cell format for transmission over the backplane (see column 6, lines 43-56) to achieve the advantage of improving utilization of the backplane. One skilled in the art would have recognized the advantage of converting received data to an internal cell format for transmission over the backplane as taught by DeNap et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the conversion of received data into an internal cell format for transmission over the backplane as taught by DeNap et al. into the office communications system of Surprenant et al. in view of Castellano to achieve the advantage of improving the utilization of the backplane.

Referring to claim 31, Surprenant et al. in view of Castellano teach the conversion of data according to a TDM protocol and data according to a second protocol to a TDM format for transmission over the backplane but fail to teach the conversion of the received data to an internal cell format for transmission over the backplane. However, conversion to an internal cell format for transmission over the backplane is well known in the art. For example, DeNap et al. teach conversion of received data to an internal cell format for transmission over the backplane

(see column 6, lines 43-56) to achieve the advantage of improving utilization of the backplane. One skilled in the art would have recognized the advantage of converting received data to an internal cell format for transmission over the backplane as taught by DeNap et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the conversion of received data into an internal cell format for transmission over the backplane as taught by DeNap et al. into the office communications system of Surprenant et al. in view of Castellano to achieve the advantage of improving the utilization of the backplane.

Referring to claim 32, Surprenant et al. in view of Castellano teach the conversion of data according to a TDM protocol and data according to a second protocol to a TDM format for transmission over the backplane but fail to teach the conversion of the received data to an internal cell format for transmission over the backplane. However, conversion to an internal cell format for transmission over the backplane is well known in the art. For example, DeNap et al. teach conversion of received data to an internal cell format for transmission over the backplane (see column 6, lines 43-56) to achieve the advantage of improving utilization of the backplane. One skilled in the art would have recognized the advantage of converting received data to an internal cell format for transmission over the backplane as taught by DeNap et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the conversion of received data into an internal cell format for transmission over the backplane as taught by DeNap et al. into the office communications system of Surprenant et al. in view of Castellano to achieve the advantage of improving the utilization of the backplane.

5. Claims 27-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Surprenant et al. in U.S. Patent No. 6,266,341 (of record) in view of Castellano in U.S. Patent

No. 6,674,750 (of record), further in view of Degges et al. in U.S. Patent No. 5,953,329 (of record), further in view of DeNap et al. in U.S. Patent No. 6,407,997 (of record).

Referring to claim 27, Surprenant et al. in view of Castellano, further in view of Degges et al. fail to disclose that the network interface receives one or more channels of network traffic as optical signals. However, the use of optical signals to communicate network traffic is well known in the art. For example, DeNap et al. teach the use of ATM/SONET with OC-3 (optical) interfaces, which has the advantage of providing high-speed ATM interfaces. One skilled in the art would have recognized the advantage of using ATM/SONET with OC-3 interfaces as taught by DeNap et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of ATM/SONET with OC-3 interfaces as taught by DeNap et al. into the office communications system of Surprenant et al. in view of Castellano, further in view of Degges et al. to achieve the advantage of providing high-speed ATM interfaces.

Referring to claim 28, Surprenant et al. in view of Castellano, further in view of Degges et al. fail to teach that the optical signals comprise SONET-framed data. However, the use of optical signals comprising SONET-framed data to communicate network traffic is well known in the art. For example, DeNap et al. teach the use of ATM/SONET with OC-3 (optical) interfaces, which has the advantage of providing high-speed ATM interfaces. One skilled in the art would have recognized the advantage of using ATM/SONET with OC-3 interfaces as taught by DeNap et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of ATM/SONET with OC-3 interfaces as taught by DeNap et al. into the office communications system of Surprenant et al. in view of Castellano,

further in view of Degges et al. to achieve the advantage of providing high-speed ATM interfaces.

Referring to claim 30, Surprenant et al. in view of Castellano, further in view of Degges et al. teach the conversion of the received data to a TDM format for transmission over the backplane but fail to teach the conversion of the received data to an internal cell format for transmission over the backplane. However, conversion to an internal cell format for transmission over the backplane is well known in the art. For example, DeNap et al. teach conversion of received data to an internal cell format for transmission over the backplane (see column 6, lines 43-56) to achieve the advantage of improving utilization of the backplane. One skilled in the art would have recognized the advantage of converting received data to an internal cell format for transmission over the backplane as taught by DeNap et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the conversion of received data into an internal cell format for transmission over the backplane as taught by DeNap et al. into the office communications system of Surprenant et al. in view of Castellano, further in view of Degges et al. to achieve the advantage of improving the utilization of the backplane.

6. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Surprenant et al. in U.S. Patent No. 6,266,341 (of record) in view of Castellano in U.S. Patent No. 6,674,750 (of record) as applied to claim 1 above, and further in view of Swenson et al. in U.S. Patent No. 5,541,921 (of record).

Referring to claim 33, Surprenant et al. disclose the use of an interface for accessing the TDM bus such as that in U.S. Patent No. 5,541,921 to Swenson et al. (see column 8, lines 46-

54). The invention of Swenson et al. teaches the use of a plurality of buffers (see Swenson et al., Fig. 6), which are coupled with each of the other interface cards across the TDM bus as shown in Fig. 3 of Surprenant et al.

7. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Surprenant et al. in U.S. Patent No. 6,266,341 (of record) in view of Castellano in U.S. Patent No. 6,674,750 (of record), further in view of Degges et al. in U.S. Patent No. 5,953,329 (of record) as applied to claim 6 above, and further in view of Swenson et al. in U.S. Patent No. 5,541,921 (of record).

Referring to claim 34, Surprenant et al. disclose the use of an interface for accessing the TDM bus such as that in U.S. Patent No. 5,541,921 to Swenson et al. (see column 8, lines 46-54). The invention of Swenson et al. teaches the use of a plurality of buffers (see Swenson et al., Fig. 6), which are coupled with each of the other interface cards across the TDM bus as shown in Fig. 3 of Surprenant et al. Swenson et al. further teach that each of their buffers corresponds to a network flow (IN1, IN2, see Fig. 6). Since the invention of Surprenant et al. is designed to facilitate communication by the cards with one another across the TDM bus, these network flows would thus correspond to the other remote cards to which the interface card is coupled across the TDM bus.

Conclusion

8. Applicant's arguments filed November 21, 2005 have been fully considered but they are not persuasive.

In the remark, the applicants mainly argued that Surprenant reference discloses communication of TDM data over a bus, but not conversion of TDM data and other protocol data to an internal cell format for transmission. Therefore, Surprenant cannot teach or suggest

conversion of data to an internal cell format for asynchronous transmission. And Castellano reference discloses transmission of multiple formats over a shared bus. However, data according to the multiple formats is not converted to an internal cell format for asynchronous transmission. Because neither Surprenant nor Castellano can teach or suggest conversion of data to an internal cell format for asynchronous transmission, no combination of Surprenant and Castellano can render the invention as claimed obvious.

The examiner disagreed since in Surprenant reference, it clearly discloses the conversion of data in different modes or protocols to an internal cell format for synchronous or asynchronous transmission over the backplane (see column 7, lines 52-59, column 8, lines 35-44). Furthermore, it is the examiner's intention to use Castellano reference for the teaching of a specific frame format comprising one or more slots for TDM traffic, one or more slots for non-TDM traffic, and one or more slots for overhead (see column 9, lines 6-15, column 11, lines 31-40, column 13, lines 3-12), which has the advantage of maximizing bandwidth efficiency, **not** for the teaching of converting multiple formats to an internal cell format.

In view of the above reasoning, the examiner believes that the rejections of claims 1, 3-6, 8-11, 13-33 and 35-40 under 35 U.S.C. 103(a) should be sustained.

9. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alpus H. Hsu whose telephone number is (571)272-3146. The examiner can normally be reached on M-F (5:30-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHH

Alpus H. Hsu
Primary Examiner
Art Unit 2665